

WHAT IS CLAIMED IS:

1. A laser apparatus capable of emitting laser beams of a plurality of different wavelengths, the apparatus including:

an exciting light source;

5 a solid-state laser medium which emits light of a plurality of peak wavelengths by light from the exciting light source;

a rotatable reflection mirror being rotatable on a resonance optical axis of the laser medium or an axis parallel to the resonance optical axis and being disposed changeably between a first position and a second position;

10 a rotating unit which rotates the rotatable reflection mirror;

a first resonance optical system including:

a first resonant mirror and a second resonant mirror placed so that the laser medium and the rotatable reflection mirror disposed in the first position are interposed between the first and second resonant mirrors to resonate light of a first peak wavelength among the plurality of peak wavelengths emitted from the laser medium, the first position being a position in which the first peak wavelength light is reflected by the rotatable reflection mirror between the laser medium and the second resonant mirror;

and

a first wavelength converting element located between the rotatable reflection mirror disposed in the first position and the second resonant mirror to oscillate second harmonic light of the first peak wavelength light as a first laser beam; and

25 a second resonance optical system including:

the first resonant mirror and a third resonant mirror placed so that the laser medium and the rotatable reflection mirror

disposed in the second position are interposed between the first and third resonant mirrors to resonate light of a second peak wavelength among the plurality of peak wavelengths emitted from the laser medium, the second position being a position in which the second peak wavelength light is reflected by the rotatable reflection mirror between the laser medium and the third resonant mirror, the second peak wavelength being different in wavelength from the first peak wavelength; and

a second wavelength converting element located between the rotatable reflection mirror disposed in the second position and the third resonant mirror to oscillate second harmonic light of the second peak wavelength light as a second laser beam.

2. The laser apparatus according to claim 1, further including an output mirror located on an optical path between the laser medium and the rotatable reflection mirror disposed in the first position or the second position, the output mirror having a property of reflecting the first peak wavelength light and the second peak wavelength light while transmitting the first laser beam and the second laser beam.

3. The laser apparatus according to claim 1, wherein the rotatable reflection mirror is used as an output mirror and has a property of reflecting the first peak wavelength light and the second peak wavelength light while transmitting the first laser beam and the second laser beam.

4. The laser apparatus according to claim 1, wherein the rotatable reflection mirror is placed so that a perpendicular line or a normal line to a reflection surface of the reflection mirror is inclined at a predetermined

angle with the resonance optical axis.

5. The laser apparatus according to claim 1, wherein the apparatus is an ophthalmic laser treatment apparatus,

5 the first wavelength converting element has a property of converting the first peak wavelength light in a near-infrared region to the first laser beam of a wavelength in a visible region, and

the second wavelength converting element has a property of converting the second peak wavelength light in a near-infrared region to
10 the second laser beam of a wavelength in a visible region.

6. A laser apparatus capable of emitting laser beams of a plurality of different wavelengths, the apparatus including:

an exciting light source;

15 a solid-state laser medium which emits light of a plurality of peak wavelengths by light from the exciting light source;

a rotatable output mirror being rotatable on a resonance optical axis of the laser medium or an axis parallel to the resonance optical axis and being disposed changeably between a first position and a second position;

20 a rotating unit which rotates the rotatable output mirror;

a first resonance optical system including:

a first resonant mirror and a second resonant mirror placed so that the laser medium and the rotatable output mirror disposed in the first position are interposed between the first and second resonant mirrors to resonate light of a first peak wavelength
25 among the plurality of peak wavelengths emitted from the laser medium, the first position being a position in which the first peak wavelength light being reflected by the rotatable output mirror

between the laser medium and the second resonant mirror; and

a first wavelength converting element located between the rotatable output mirror disposed in the first position and the second resonant mirror to oscillate second harmonic light of the first peak wavelength light as a first laser beam; and

a second resonance optical system including:

the first resonant mirror and a third resonant mirror placed so that the laser medium and the rotatable output mirror disposed in the second position are interposed between the first and third resonant mirrors to resonate light of a second peak wavelength among the plurality of peak wavelengths emitted from the laser medium, the second position being a position in which the second peak wavelength light is reflected by the rotatable output mirror between the laser medium and the third resonant mirror, the second peak wavelength being different in wavelength from the first peak wavelength; and

a second wavelength converting element located between the rotatable output mirror disposed in the second position and the third resonant mirror to oscillate second harmonic light of the second peak wavelength light as a second laser beam,

wherein the rotatable output mirror has a property of reflecting the first peak wavelength light and the second peak wavelength light while transmitting the first laser beam and the second laser beam.

7. The laser apparatus according to claim 6, further including:

an optical fiber located on an optical path on a transmittance side of the rotatable output mirror; and

a condensing lens which concentrates the laser beam having passed

through the rotatable output mirror into the fiber,

wherein the rotatable unit is arranged to rotate the optical fiber and the condensing lens together with the rotatable output mirror.

5 8. The laser apparatus according to claim 6, wherein the rotatable output mirror is placed so that a perpendicular line or a normal line to a reflection surface of the output mirror is inclined at a predetermined angle with the resonance optical axis.

10 9. The laser apparatus according to claim 6, wherein the apparatus is an ophthalmic laser treatment apparatus,

the first wavelength converting element has a property of converting the first peak wavelength light in a near-infrared region to the first laser beam of a wavelength in a visible region, and

15 the second wavelength converting element has a property of converting the second peak wavelength light in a near-infrared region to the second laser beam of a wavelength in a visible region.